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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/830,014	04/23/2004	Kunio Kojima	1785.1016	7648
21171	7590	10/03/2006	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			RIVELL, JOHN A	
			ART UNIT	PAPER NUMBER
			3753	

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/830,014	<b>Applicant(s)</b> KOJIMA ET AL.	
	<b>Examiner</b> John Rivell	<b>Art Unit</b> 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 4/23/04 (application).
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>05102006</u> | 6) <input type="checkbox"/> Other: _____  |

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. §102 (b) as being anticipated by Davis.

The patent to Davis discloses, generally at 9 of figure 1 and in detail in several operating positions in figures 3-5, a "quantitative distributor comprising a cylinder (body 20, fig. 2), a piston (32) positioned in the cylinder, an elastic body (conical spring 56) pressurizing the piston (32), the piston (32) being moved by a pressure of a substance (lubricant) intermittently applied to the distributor (at inlet 22, fig. 2; from the left in figs. 3-5) against a force of the elastic body (56), a predetermined volume of the substance to be discharged (through outlet valve 14) from the distributor being determined by a distance of movement of the piston (32) in the cylinder (body 20), wherein a discharge volume of the substance from the distributor corresponds to the pressure of the substance supplied to the distributor" as recited in claim 1.

Regarding claim 2, in Davis, "the elastic body (conical spring 56) pressurizing the piston (inherently) has a Young's modulus which is variable by a position of the piston" as recited. For extrinsic evidence of the variable spring rate of a conical spring note Freiheit column 1, lines 56-61 which disclose the variable spring rate of a conical compression spring.

Claim 1 is further, and claims 5 and 6 are rejected under 35 U.S.C. §102 (b) as being anticipated by Parker.

The patent to Parker, in figure 4 for example, discloses a "quantitative distributor comprising a cylinder (body 11 defining cylinder space 25), a piston (27) positioned in the cylinder, an elastic body (spring 37) pressurizing the piston (27), the piston (27) being moved by a pressure of a substance intermittently applied to the distributor (at inlet 15) against a force of the elastic body (27), a predetermined volume of the substance to be discharged (through outlet valve 39) from the distributor being determined by a distance of movement of the piston (27) in the cylinder (11 at space 25), wherein a discharge volume of the substance from the distributor corresponds to the pressure of the substance supplied to the distributor" as recited in claim 1.

Regarding claim 5, Parker discloses a "quantitative distributor comprising a cylinder (body 11 defining cylinder space 25), a piston (27) positioned in the cylinder, an elastic body (spring 37) pressurizing the piston (27), the piston (27) being moved by a pressure of a substance intermittently applied to the distributor (at inlet 15) against a force of the elastic body (37), a predetermined volume of the substance to be discharged from the distributor (through outlet valve 39) being determined by a distance of movement of the piston (27) in the cylinder (25), wherein an inflow side (upper at 24) and a discharge side (lower at 25) of the cylinder chamber separated from each other by the piston (27) are communicated each other by movement of the piston (27) over a distance more than a distance of movement of a normal operation (see figure 3, "normal operation" distance is read as being a distance moved by the piston 27 which will not

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effect opening of central valve head 31 and passage 30), such that a conduit (passage 30) for supplying the substance to the distributor and a delivery port of the distributor are communicated each other" as recited.

Regarding claim 6, in Parker, "an inflow side (upper 24) and a discharge side (lower 25) of the cylinder chamber separated from each other by the piston (27) are communicated each other by movement of the piston (27) over a distance more than a distance of movement of a normal operation (see figure 3, "normal operation" distance is read as being a distance moved by the piston 27 which will not effect opening of central valve head 31 and passage 30), such that a conduit (passage 30) for supplying the substance to the distributor and a delivery port of the distributor are communicated each other" as recited.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Moore (U.S. Pat. No. 1,935,866).

The patent to Davis discloses all the claimed features with the exception of having "the elastic body (comprise) a plurality of elastic elements arranged in series, each of which has a different Young's modulus from each other".

The patent to Moore ('886) discloses that it is known in the art to employ a plurality of serially arranged springs, such as at springs 36 and 37, biasing an injection piston at upper piston 31', in which the strength of spring 37 is less than the strength of spring 36 but greater than the strength of spring 36, spring 36 being the strongest (page 2, lines 1-24) for the purpose of biasing the upper injection piston with a spring mechanism in which the Young's modulus varies thus effecting stroke control by applied pressure in a manner other than the use of a conical spring, whose Young' modulus is also variable. The differences here present mere structural differences performing the same function and are thus functionally equivalent.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Davis plural serial springs of different strengths, in place of the conical spring 56 of Davis for the purpose of biasing the piston with a spring mechanism in which the Young's modulus varies thus effecting stroke control by applied pressure in a manner other than the use of a conical spring, as recognized by Moore ('886).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of De Forrest.

The patent to Davis discloses all the claimed features with the exception of having "the elastic body (comprise) a plurality of elastic elements arranged in parallel such that start points of compression of the elastic elements are different from each other due to the position of the piston".

The patent to Deforrest discloses that it is known in the art to employ a plurality of parallel springs 30, 31 each of different length than the other thus presenting a spring mechanism of variable Young's modulus thus effecting stroke/distance control of the biased element by applied pressure in a manner other than the use of a conical spring, whose Young' modulus is also variable. The differences here present mere structural differences performing the same function and are thus functionally equivalent.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Davis plural parallel springs of different length in place of the conical spring 56 of Davis for the purpose of biasing the piston with a spring mechanism in which the Young's modulus varies thus effecting stroke control by applied pressure in a manner other than the use of a conical spring, as recognized by as recognized by Deforrest.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Dussault.

The patent to Davis discloses all the claimed features with the exception of having "the inflow side and the discharge side of the cylinder chamber separated from each other by the piston... communicated (with) each other by expanding an inner diameter of the cylinder at the point in which the piston is moved over a distance more than the distance of movement of the normal operation". In Davis, "normal operation" distance is read as being a distance moved by the piston 27 which will not effect opening of central valve head 31 and passage 30.

The patent to Dussault discloses that it is known in the art to employ an expanding inner diameter of the cylinder at widening 21 of the cylinder body at the point in which the piston 27 is moved over a distance more than the distance of movement of the normal operation for the purpose of fluidly connecting the inlet 41 to the outlet 43. In

Dussault "normal operation" is read as that distance piston 27 moves axially in which the inlet 41 is not connected to the outlet.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Davis a widening of the cylinder containing the piston at a location "beyond" that location in which the piston occupies during "normal operation" for the purpose of connecting the inlet to the outlet upon movement to a location/position/distance beyond that occupied by "normal operation" as recognized by Dussault.

Applicant is advised that should claim 5 be found allowable, claim 6 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). On review it is clear that currently, claims 5 and 6 are word-for-word duplicates.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Rivell whose telephone number is (571) 272-4918. The examiner can normally be reached on Mon.-Thur. from 6:30am-5:00pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Keasel can be reached on (571) 272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**John Rivell**  
**Primary Examiner**  
**Art Unit 3753**

j.r.